

## CLAIMS

1. An aluminum-based target consisting of a plurality of aluminum alloy target members,

5 characterized in that the aluminum-based target has a joint in which the aluminum alloy target members have been joined with a friction stir welding method.

2. The aluminum-based target according to claim 1, wherein the joint includes dispersed precipitates with diameters of 10  $\mu\text{m}$  or smaller.

10

3. The aluminum-based target according to claim 1 or 2, wherein the aluminum alloy comprises at least 0.5-7.0 at% one or more elements selected from the group consisting of nickel, cobalt and iron, and the balance aluminum.

15

4. The aluminum-based target according to claim 3, wherein the aluminum alloy further includes 0.1 to 3.0 at% carbon.

5. The aluminum-based target according to claim 3 or 4, wherein the 20 aluminum alloy further includes 0.5 to 2.0 at% silicon.

6. The aluminum-based target according to any one of claims 3 to 5, wherein the aluminum alloy further includes 0.1 to 3.0 at% neodymium.

25 7. An aluminum-based target made by joining a plurality of aluminum alloy target members with each other,

characterized in that a joint has blow holes with diameters of 500  $\mu\text{m}$  or smaller in an amount of 0.01-0.1 hole/cm<sup>2</sup>.

8. An aluminum-based target made through joining a plurality of aluminum alloy target members with each other,  
characterized in that a joint does not have blow holes with diameters  
5 exceeding 500  $\mu\text{m}$ .

9. The aluminum-based target according to claim 7 or 8, wherein the joint contains dispersed precipitates with diameters of 10  $\mu\text{m}$  or smaller.

10 10. The aluminum-based target according to any one of claims 7 to 9, wherein the aluminum alloy comprises at least 0.5-7.0 at% one or more elements selected from the group consisting of nickel, cobalt and iron, and the balance aluminum.

15 11. The aluminum-based target according to any one of claims 7 to 10, wherein the joint is formed with a friction stir welding method.

12. A method for manufacturing an aluminum-based target characterized in that the method comprises the steps of:  
20 abutting end faces of one side of the aluminum alloy target members with each other; and  
arranging a probe for friction stir welding at an abutted part to cause relative circulation movement between the probe and the abutted part, and producing a plastic flow in the abutted part by a generated frictional heat, and  
25 joining the aluminum alloy target members.

13. The method for manufacturing an aluminum-based target according to claim 12, wherein the aluminum alloy target members are joined from both sides of the front side and back side of the members.

5 14. The method for manufacturing an aluminum-based target according to claim 12 or 13, wherein adjacent abutted parts are joined in the same moving direction of a probe from a start point to an end point.

10 15. The method for manufacturing an aluminum-based target according to claim 12 or 13, wherein the adjacent abutted parts are joined in the opposite moving direction of a probe from the other, from a start point to an end point.

15 16. The method for manufacturing an aluminum-based target according to any one of claims 12 to 15, wherein a traveling distance per revolution of a probe is 0.5 to 1.4 mm.

17. The method for manufacturing an aluminum-based target according to any one of claims 12 to 16, wherein the relative density of the aluminum alloy target member is 95% or higher.

20

18. An aluminum-based target obtained through any of the manufacturing methods, which methods according to claims 12 to 17.